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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/915,086	07/25/2001	Ilene Ruth Seelemann	CA920000078US1	5577
25259	7590	06/10/2004	EXAMINER	
IBM CORPORATION 3039 CORNWALLIS RD. DEPT. T81 / B503, PO BOX 12195 REASEARCH TRIANGLE PARK, NC 27709			VO, TED T	
			ART UNIT	PAPER NUMBER
			2122	

DATE MAILED: 06/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/915,086	SEELEMANN, ILENE RUTH	
	<b>Examiner</b>	<b>Art Unit</b>	
	Ted T. Vo	2122	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 July 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-23, 25 is/are allowed.
- 6) ☒ Claim(s) 1-16, 24 and 27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. This action is in response to the application filed on 07/25/2001.

Claims 1-27 are pending in the application.

***Claims Objection***

2. Claim 26 is identical to Claim 1. It requires correcting or canceling Claim 26.

***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. The Claims 1-12 and 26-27 are rejected under 35 U.S.C 101 because the claimed invention is directed to non-statutory subject matter.

As per claims 1-4, 12:

Claim 1 is claiming a method. The claim's method is merely stated as of generating program source code to perform a mapping task comprising performing a depth-first traversal of a logical tree. The whole claimed body fails to show further limitations for causing the method to be tangibly embodied in computer process. According to the claimed body, the method merely shows a performance that could be manipulated in paper for doing first-depth traversal. Such claiming is manipulating an abstract idea and thus fails to be in the technological or useful arts, and thus fails to recite patent eligible subject matters.

Claims 2-4, and 12 fail to remedy the deficiencies of independent claim 1.

As per claims 5-11:

Claim 5 is claiming a method. The claim's method is merely stated as of generating program source code comprising performing a depth-first traversal of a logical tree, where the claimed method has the

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functionality claiming in the similar manner as of Claim 1, and fails to show further limitations for causing the method to be tangibly embodied in computer process. According to the claimed body, the method merely shows a performance that could be manipulated in paper for doing first-depth traversal. Such claiming is manipulating an abstract idea and thus fails to be in the technological or useful arts, and thus fails to recite patent eligible subject matters.

Claims 6-11 fail to remedy the deficiencies of independent claim 5.

As per claims 26-27:

Claims 26-27 are claiming methods that are corresponding or identical to Claims 1 and 5 respectively.

See rationale of Claim 1 and 5 above.

According to the analyses above, claims 1-12, and 26-27 fail to meet the statute, and thus are rejected under 35 U.S.C 101.

To expedite a complete examination of the instant application the claims rejected under 35 U.S.C. 101 (nonstatutory) above are further rejected as set forth below in anticipation of application amending these claims to place them within the four statutory categories of invention.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

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6. Claims 1, 4, 12, 13, 16, 24, 26 are rejected under 35 U.S.C. 102(a) as being anticipated by Passerone et al., "Generation of minimal size code for schedule graphs", IEEE 3-2001.

Given the broadest reasonable interpretation of followed claims in light of the specification:

As per Claim 1: Passerone discloses,

*A method of generating program source code to perform a mapping task in which enterprise system nested array object fields and legacy system nested array object fields are mapped to one another, said method comprising: performing a depth-first traversal of a logical tree having a root node, a leaf node for each desired mapping connection, and intermediate nodes between said root node and said leaf nodes, each intermediate node being associated with an array;(See pages 669-671, Sections 3, 3.1 and 3.2), the depth-first traversal comprising:*

*(i) for each intermediate node visited when traversing away from said root node, generating program source code to open a loop; (See pages 670-671, Sections 3.1 Initialization: Cutting loops, referring to "cutting loops when already visited nodes are encountered" in page 670, left column, first paragraph);*

*(ii) for each visited leaf node, generating program source code to create the mapping connection represented by said visited leaf node (see page 672, left column, Execution: "when a leaf node is reached, the update or jump section are generated before going back in the traversal"); and*

*(iii) for each intermediate node having no unvisited children that is visited when traversing towards said root node, generating program source code to close said loop (See Page 671, left column, first full text paragraph, "the await nodes are put in nodelist so that new invocations of the function can proceed" and last paragraph; "it means we have reaches a loop in the schedule that was cut" (a node that had the open loop) and "in the last two cases, the child is also added to nodelist for further traversal (close the loop); and see page 762, "update" and "jump").*

As per Claim 4: Passerone discloses, *The method of claim 1, wherein said loop opened in step said (i) has a number of iterations corresponding to a size of the array associated with said visited intermediate node. See page 669, Figure 1. In this case, an array that is associated with a node (For example, node v3(a), or v6(d)) and its iteration have the same size.*

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As per Claim 12: Passerone discloses, *The method of claim 1, wherein said logical tree is represented by a tree data structure.* (See Figure 1).

As per Claims 13, 24, and 26: Claims 13, 24, and 26 recite the limitation that has the functionality corresponding to the functionality of Claim 1. See rationale in Claim 1 above.

As per Claim 16: Claim 16 recites the limitation that has the functionality corresponding to the functionality of Claim 4. See rationale in Claim 4 above.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A person shall be entitled to a patent unless –

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2-3, 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Passerone et al., "Generation of minimal size code for schedule graphs", in view of Lobe et al., "The Object-Oriented Components of the Enterprise Parallel Programming Environment", 1993.

As per Claim 2:

Passerone discloses each immediate node is associated with an array as addressed in Claim 1.

Passerone does not expressly address, *each intermediate node is associated is an enterprise system array.*

Lobe discloses such limitation (See Lobe; page 6, right column section 3.3).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention was made to associate an "enterprise" array component as disclosed by Lobe with an

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intermediate node as disclosed by Passerone. Doing so would conform to the common business solution to promote re-usability and efficiency.

As per Claim 3:

Passerone discloses each immediate node is associated with an array as addressed in Claim 1.

Passerone does not expressly address, *each intermediate node is associated is a legacy system array.*

Lobe discloses such limitation (See Lobe; page 4, right column, second paragraph of section 3).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention was made to associate a "legacy" array component as disclosed by Lobe with an intermediate node as disclosed by Passerone. Doing so would conform to the common business solution to promote re-usability and efficiency.

As per Claim 14: Claim 14 recites the limitation that has the functionality corresponding to the functionality of Claim 2. See rationale in Claim 2 above.

As per Claim 15: Claim 15 recites the limitation that has the functionality corresponding to the functionality of Claim 3. See rationale in Claim 3 above.

***Allowable Subject Matter***

9. Claims 17-23, 25 are allowed.

Prior art of record Passerone taken alone and other prior art of records in combination fail to teach the claimed limitation:

*(a) receive a list of desired mapping connections between enterprise system fields and legacy system fields; (b) determine, for each desired connection between an enterprise system field and a legacy system field, connection information comprising: (i) the identity of the nested enterprise arrays containing said enterprise system field; (ii) the identity of the nested legacy arrays containing said legacy system field; and (iii) a nesting level of*



*said connection; (c) create a logical tree representative of said mapping task comprising: (i) a root node; (ii) one leaf node for each said desired mapping connection; and (iii) for each leaf node, N intermediate nodes interconnecting said leaf node and said root node, where N is equivalent to the determined nesting level of the connection associated with said leaf node, and where each of the N intermediate nodes that is successively further from the root node is associated with an array that is successively more deeply nested; and (d) perform a depth-first traversal of said logical tree to generate mapping source code, said traversal comprising: (i) for each intermediate node visited when traversing away from said root node, generating program source code to open a loop; (ii) for each visited leaf node, generating program source code to create the mapping connection represented by said visited leaf node; and (iii) for each intermediate node having no unvisited children that is visited when traversing towards said root node, generating program source code to close said loop.*

as recited in independent Claim 17, and in such manners as recited in independent Claim 25.

Passerone fails to address such limitation as listed above, particularly the steps a, b, and c.

10. Claims 5-11, 27:

Independent Claims 5 (and its dependency), and independent Claim 27 are recited in such manners as recited in Claim 17, but would be allowable if the Claims amended to overcome the rejection under 35 U.S.C 101.

**Conclusion**

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

King et al., "Structuring Depth-First Search Algorithms in Haskell", ACM 1995, disclose a depth-first search algorithm.

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Hendren et al., "Support Array Dependent Testing for an Optimizing/Parallelizing C Compiler", McGill 1993, discloses a compiler that uses traversal to build a list of expression trees.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted T. Vo whose telephone number is (703) 308-9049. The examiner can normally be reached on Monday-Friday from 8:00 AM to 5:30 PM ET. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam, can be reached on (703) 305-4552.

The fax phone numbers:

(703) 872-9306 (for formal communication intended for entry);

(703) 746-5429 (for informal or draft communication, please label "PROPOSED" or "DRAFT").

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

TED T. VO

Patent Examiner  
Art Unit: 2122  
June 4, 2004